PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of : Barnett et al.	) Examiner: F. Ehichioya
	)
Serial No.: 09/759,498	) Art Unit: 2172
	)
Filed: January 12, 2001	)
	)
For: **Multi-Term Frequency Analysis**	) Atty Dkt: 6871-105/10024998
	)

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APPEAL BRIEF

Applicants hereby appeal the Final Rejection, dated April 9, 2004, of the above mentioned Application. A Notice of Appeal was filed July 8, 2004, and received a filing date of July 13, 2004. Enclosed with this Appeal Brief is the required filing fee set forth in 37 CFR § 1.17(c), and any necessary extension. This Appeal Brief is filed in triplicate.

The following items are included in this Appeal Brief, beginning on the pages set forth below:

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       A.   Claim 139 is improperly rejected under 35 U.S.C. 103(a) as unpatentable over Hazlehurst in view of Braden-Harder, and this rejection should be reversed. Claims 140-158 are improperly rejected under 35 U.S.C. 103(a) as unpatentable over Hazlehurst in view of Braden-Harder, and further in view of Rivette, and this rejection should be reversed.

       B.   Claims 140-158 are improperly rejected under 35 U.S.C. 103(a) as unpatentable over Hazlehurst in view of Braden-Harder, and further in view of Rivette, and this rejection should be reversed.

(1) **Real Party in Interest**

The Applicants of the above mentioned Application are the inventors indicated in the caption of this Appeal Brief. In February, 2001, the named inventors assigned their rights in the Application to PricewaterhouseCoopers LLP, a Delaware limited liability partnership, One North Wacker Drive, Chicago, IL 60606. The Assignment is recorded at Reel/Frame 11644/251. In September, 2004, PricewaterhouseCoopers LLP assigned their rights in the Application to Knowledge Sphere, Inc., an Ohio corporation, 2588 Princeton Road, Cleveland, OH 44118-4350. The September, 2004 Assignment is being filed with the U.S. Patent Office contemporaneously with this Appeal Brief. PricewaterhouseCoopers LLP has a non-exclusive license in the subject matter of this Application.

(2) **Related Appeals and Interferences**

None.

(3) **Status of Claims**

Claims 1-138 have been canceled.

Claims 139 – 158 are pending, on appeal, and have the following status:

> Claim 139 is finally rejected under 35 U.S.C. 103(a) as unpatentable over U.S. Patent No. 5,974,412 to Hazlehurst et al. ("Hazlehurst") in view of U.S. Patent No. 5,933,822 to Braden-Harder et al. ("Braden-Harder").

> Claims 140-158 are finally rejected under 35 U.S.C. 103(a) as unpatentable over Hazlehurst in view of Braden-Harder and further in view of U.S. Patent No. 5,991,751 to Rivette et al. ("Rivette").

(4) **Status of Amendments**

Applicants have submitted, contemporaneous with the filing of this Appeal Brief, an Amendment After Final Rejection, pursuant to which Applicants request amendment of Claims 139-140 and 146-148, to place the claims in condition for allowance or in better condition for a

further appeal. It is noted that Claims 139-158 are dealt with herein accordance with their current status, as set forth above in item (3).

(5) Summary of Invention

The present invention is a computer tool for analyses of the results of database searching. Using the tool, analyses of a collection of documents each having a searchable text and associated bibliographic information including a source and a date may be conducted. To use the tool, search results which identify a subset or second collection of documents focused on a particular field is provided to the tool. Documents within the subset are identified as relevant to each of "m" desired types of actions. Documents within the subset are also identified as relevant to each of "n" desired types of objects. The "m" actions and "n" objects identified are then combined to construct an "m" by "n" array of "cells", or a matrix, with the contents of each cell being associated only with the documents in the subset identified as relevant both to the respective action and to the respective object. Within the matrix constructed, at least two scoring metrics are applied to the bibliographic data for the documents associated with each of the cells, such as a time weighted predictive factor. A graph is also generated which shows each of the applied scoring metrics for each of the matrix cells.

(6) Issues

A. Whether Claim 139 is improperly rejected under 35 U.S.C. 103(a) as unpatentable over U.S. Patent No. 5,974,412 to Hazlehurst in view of Braden-Harder et al.?

B. Whether Claims 140-158 are improperly rejected under 35 U.S.C. 103(a) as unpatentable over Hazlehurst in view of Braden-Harder, and further in view of Rivette?

(7) Grouping of Claims

Claims 139 to 158 stand or fall as a group.

(8) <u>**Argument**</u>

  A. <u>Claim 139 is improperly rejected under 35 U.S.C. 103(a) as unpatentable over</u> <u>Hazlehurst in view of Braden-Harder, and this rejection should be reversed.</u>

  The rejection of Claim 139 as obvious over Hazlehurst in view of Braden-Harder is believed improper, and should be reversed. Claim 139 recites a computerized tool for facilitating analyses of a collection of technical documents each having a searchable text and associated bibliographic information including a source and a date, comprising the computer-assisted steps of, performing a search to identify a subset or second collection of documents focused on a particular field, identifying those documents in the subset relevant to each of "m" "actions" and identifying those documents in the subset relevant to each of "n" "objects". The further step of combining each of the "m" actions with each of the "n" objects to construct an "m" by "n" array of "cells", such that each of the cells is associated only with the documents in the subset that were identified as relevant both to the respective action and to the respective object is then conducted. At least two scoring metrics are then applied to the bibliographic data for the documents associated with each of the cells, with at least one of the scoring metrics including a time weighted factor, and generating a graph showing each of the applied scoring metrics for each of the array cells.

  To render an invention obvious, prior knowledge in the field of the invention must be supported by tangible teachings of reference materials. <u>Gambro Lundia AB v. Baxter Healthcare</u> <u>Corp.</u>, 110 F.3d 1573, 1578-79 (Fed. Cir. 1997) ("However, the record must provide a teaching, suggestion, or reason to substitute computer-controlled valves for the system of hoses in the prior art. The absence of such a suggestion to combine is dispositive in an obviousness determination.") As the Hazlehurst and Braden-Harder references do not provide the features of the invention recited in Claim 139, they likewise lack a teaching to combine the references to obtain the Claim 139 invention. The citation and combination of the Hazlehurst and Braden-Harder references is in error and should be reversed.

  Neither the Hazlehurst nor Braden-Harder references provide an analyses tool resulting in a combined matrix of cells, with each cell associated with documents in the subset identified as

relevant to both the respective "m" action and to the respective "n" object of the search conducted. The "document table" described by Hazlehurst beginning at Col. 11, line 66 is not the matrix of actions and objects recited in Claim 139. In the Claim 139 invention, each cell is associated with documents identified as relevant to, for example, both the action of the row and the object of the column. The searching conducted by Hazlehurst is disclosed as including autoclassification of similarities within database documents, and the creation of representational vectors to estimate the semantic closeness or semantic distance between similar representations. The columns of the table described by Hazlehurst "represent greater distance from the document represented by the row," and is a method to obtain and rank the search results. Col. 12, lines 12-13. As such, the Hazlehurst "table" provides a simple numeric arrangement, with the increasingly numbered columns representing the increasingly greater distances of the referenced cell documents from the document represented by the row. Nothing in the Hazlehurst disclosure provides for the use of the desired "m" actions and "n" objects as the columns and rows of the matrix construct as recited in Claim 139. The reference to Hazlehurst as providing such a disclosure is in error and should be reversed.

Additionally, the Hazlehurst reference does not provide the recited use of scoring metrics, where at least one of the metrics is a time weighted factor, for example the date from the bibliographic data. The use of a time weighted factor in the Claim 139 invention provides a novel and non-obvious scoring of time relative to the document importance of the matrix cell data. A review of the "query goodness scores" provided in Hazlehurst, Col. 22, lines 5-27, does not disclose the use of a time based factor of any sort. "Goodness" of fit in Hazlehurst is functionally different from weighting a known time series, and is related to obtaining the search results, not their analyses. The weighting of documents in Hazlehurst determines the relevance of the document based upon time, and for which a relevance score is then calculated. Since the disclosure of Hazlehurst is quite different from the features of the invention Claim 139, Claim 139 is not obvious to one of ordinary skill in the art in view of Hazlehurst, and the rejection of Claim 139 as obvious in view of Hazlehurst should be reversed.

The Braden-Harder reference likewise fails to teach or disclose providing a time weighted predictive factor. Although the Final Office Action (at Page 4) indicates that Braden-Harder provides a time weighted factor, specifically at Col. 1, lines 17-22 and Col. 18, lines 8-

24, the reference to Braden-Harder does not disclose a time weighted factor of any sort. A review of Columns 17 and 18 of Braden-Harder discloses the use of a variety of relative weighting factors for organization of the search results, but none are time related.

Additionally, none of the Braden-Harder weighting factors appear related to the use of the bibliographic data from the documents associated with each of the cells in the array. To render Claim 139 obvious, the Hazlehurst and Braden-Harder references must disclose or suggest the recited features of the claim. Additionally, there must be a suggestion for their combination. Although the Final Office Action, at Page 4, indicates that the motivation to combine Braden-Harder with Hazlehurst is that the scoring metrics enable the statistical search engine to rank the documents presented to the user according to the weight. Unfortunately, Braden-Harder does not present a time weighted factor as one of the disclosed scoring metrics, but instead provides weighting factors related to semantic relationships within the documents. The goodness of fit between semantic relationships is fundamentally different from weighting a known time factor. There is no suggestion from Braden-Harder that time weighting would be important to a user, much less a suggestion that such a factor should be combined with Hazlehurst.

As Braden-Harder does not disclose the features of Claim 139, which are also lacking in Hazlehurst, the combination of these references does not render the invention of Claim 139 obvious under §103(a). Reversal of the rejection of Claim 139 as unpatentable in view of the erroneous citation of Braden-Harder and its erroneous combination with Hazlehurst, is requested.

C. Claims 140-158 are improperly rejected under 35 U.S.C. 103(a) as unpatentable over Hazlehurst in view of Braden-Harder, and further in view of Rivette, and this rejection should be reversed.

The rejection of Claims 140-158 as obvious based upon the combination of Hazlehurst and Braden-Harder together with Rivette is in error and should be reversed. As set forth above, the features of independent Claim 139 are erroneously stated as found in the recited references. The combination of Rivette to the citation of Hazlehurst with Braden-Harder does not overcome this error with respect to dependent Claims 140-158.

The suggestion to combine references must not be derived by hindsight from knowledge of the invention itself. Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1143 (Fed. Cir. 1985) ("When prior art references require selective combination by the court to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself.")

The construct of the search described by Rivette is hierarchical in nature and is not provided in an array of cells of actions and objects as recited in the claimed invention. The disclosure of Rivette provides for arrangements of databases which are in effect tables of contents. The arrangements may be by bibliographic data, citation or concepts, but nothing about such arrangements provides the arrangement of rows and columns as objects and actions in the recited claims. Neither is it obvious from the disclosures of Hazlehurst or Braden-Harder that Applicants' actions and objects should be arranged in an array of "m" by "n" cells. Nor is there motivation from the hierarchical arrangement of the Rivette database search tool to arrange such actions and objects as a matrix. The Final Office Action, at Page 5, states that the motivation is that patent citation identifies source patents and citing patents for reference purposes. However, such a statement does not motivate one to combine the search tool of Rivette with Hazlehurst and Braden-Harder and thus obtain the array of objects and actions as the cells recited in Claims 140-158. Hazlehurst and Braden-Harder, respectively, suggest searching tools to autoclassify similar subject matter, and to obtain clustering of similar representations which are arranged with respect to the closeness or similarity of the representations. How the disclosure of Rivette would be combined with the combination of Hazlehurst and Braden-Harder to obtain the recited claims would not be obvious to one of ordinary skill in the art without improper hindsight reconstruction with Applicants' invention in mind. The combinations of Hazlehurst and Braden-Harder with Rivette do not result in Applicants' claimed invention and are improper. The rejection of Claims 140-158 should be reversed.
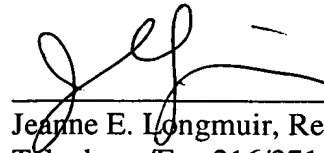
C.   Conclusion

A review of the cited references indicates that teachings of certain of the recited features of the claimed invention are not disclosed by the Hazlehurst or Braden-Harder references. Moreover, there is no motivation provided from the cited references for their combination, or for

the further combination of Rivette. Applicants' invention in Claim 139-158 is not obvious and this improper rejection should be reversed.

Respectfully Submitted,

Date: 11/15/04

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Appendix

The claims involved in this appeal are as follows:

139. A computerized tool for facilitating forward looking strategic analyses of a collection of technical documents each having a searchable text and associated bibliographic information including a source and a date, comprising the computer-assisted steps:

performing a first search to identify a subset (second collection) of documents focused on a particular field,

identifying those documents in the subset relevant to each of "m" "actions";

identifying those documents in the subset relevant to each of "n" "objects";

combining each of the "m" actions with each of the "n" objects to construct an "m" x "n" array of "cells", such that each of the cells is associated only with the documents in said subset that were identified as relevant both to the respective action and to the respective object;

applying at least two scoring metrics to the bibliographic data for the documents associated with each of the cells, at least one of the scoring metrics including a time weighted predictive factor; and

generating a graph showing each of the applied scoring metrics for each of the array cells.

140. The computerized tool of claim 139 wherein the actions and objects include specific instances of categories selected from the group consisting essentially of products, services, production methods, production applications, technologies, technological applications, chemical compounds, chemical indications, inventors, assignees, forward citations to a key reference, backward citations to a key reference, and combinations thereof.

141. The computerized tool of claim 140 wherein the documents include both issued patents and not yet issued patent applications.

142. The computerized tool of claim 141 wherein the source information includes patent assignees.

143.   The computerized tool of claim 142 wherein the date information includes a filing date.

144.   The computerized tool of claim 143 wherein the date information also includes an issue date for the issued patents.

145.   The computerized tool of claim 144 wherein one of the scoring metrics includes an innovation measure which takes into account changes of patent activity over time.

146.   The computerized tool of claim 144 wherein one of the scoring metrics includes a recent innovation measure which takes into recently filed patent applications.

147.   The computerized tool of claim 144 wherein one of the scoring metrics includes a measure of the relative position of a particular assignee within a particular cell.

148.   The computerized tool of claim 142 wherein each scoring metric is focused on a different assignee.

149.   The computerized tool of claim 148 wherein the graph is a spider graph showing each assignee's score for a predetermined number of key cells overlaid over the corresponding scores for at least two other assignees.

150.   The computerized tool of claim 139 wherein the graph displays a visual quantitative comparison for each scoring metric.

151.   The computerized tool of claim 150 wherein some of the cells are grouped into "clusters", and a combined scoring metric is displayed for each cluster.

152.   The computerized tool of claim 139 wherein the bibliographic source information includes the name of a subject person, organization, or event.

153.   The computerized tool of claim 139 wherein the date bibliographic information includes a publication date.

154.   The computerized tool of claim 139 wherein the time weighted predictive factor is based at least in part on a publication, creation, or issue date.

155.   The computerized tool of claim 139 wherein one of the scoring metrics includes a concentration or frequency measure which takes into account distribution of the selected documents among their respective sources.

156.   The computerized tool of claim 139 wherein one of the scoring metrics includes a composite measure of dominance, innovation, and predictive innovation.

157.   The computerized tool of claim 139 wherein the actions and objects are crossed with a third dimension to form a three dimensional matrix.

158.   The computerized tool of claim 139 wherein the graph is a bar graph which each bar showing a particular scoring metric applied to a particular cell.